

AMENDMENTS TO THE CLAIMSEX. Amdt.
3-2004Listing of the Claims:

Following is a listing of all claims in the present application, which listing supersedes all previously presented claims:

1. (Currently Amended) An apparatus for manufacturing a semiconductor device using plasma, comprising:

a chamber having a plasma generating region and a plasma processing region for performing a manufacturing process on the semiconductor device under a plasma atmosphere;

a plasma generating means adjacent the plasma generating region; and

a plasma concentrating means for reducing the size of the plasma processing region near the semiconductor device to be processed compared to the size of a plasma generating region, the plasma concentrating means including:

an electrode having a first length on which the semiconductor device to be processed is positioned;

an insulating plate having a second length longer than the first length and facing the electrode; and

a confinement layer contacting the edge of the insulating plate, forming an acute angle to a virtual plane connecting opposing ends of the insulating plate, and extending toward an edge of the first electrode.

2. (Canceled)

3. ^{cancelled}
~~(Withdrawn)~~ The apparatus as claimed in claim 2, wherein the insulating plate includes a first part having a first radius of curvature and a second part having a second radius of curvature, which is smaller than the first radius of curvature, wherein an edge of the second part of the insulating plate is connected to the confinement layer.

4. ^{cancelled}
~~(Withdrawn)~~ The apparatus as claimed in claim 2, wherein the insulating plate has a dome shape having a predetermined radius of curvature, and the second length is the same as the projected diameter of the insulating plate.

5. (Currently Amended) The apparatus as claimed in claim 1 2, wherein the insulating plate is a circular plate having a predetermined diameter, and the second length is the diameter of the insulating plate.

6. ^{cancelled}
~~(Withdrawn)~~ The apparatus as claimed in claim 1, wherein the plasma concentrating means comprises:

- an electrode having a first length;
- an insulating plate having a dome shape, positioned to face the electrode and including a first part having a first radius of curvature and a second part having a second radius of curvature which is smaller than the first radius of curvature; and
- a confinement layer connected to the second part of the insulating plate and extending toward the electrode,

wherein a second length, which is a projected length of the insulating plate, is larger than the first length of the electrode.

7. ^{cancelled}
~~(Withdrawn)~~ The apparatus as claimed in claim 6, wherein the confinement layer is substantially perpendicular to the projected length of the insulating plate.

8. (Currently Amended) The apparatus as claimed in claim 1 2, further comprising a chuck for supporting a wafer having a third length and disposed on the electrode.

9. (Original) The apparatus as claimed in claim 8, wherein the second length is over 140% of the third length.

10. (Original) The apparatus as claimed in claim 9, wherein the first length of the electrode is over 120% of the third length.

11. (Original) The apparatus as claimed in claim 10, wherein the distance from the edge of the wafer to an associated edge of the electrode is between 10 and 15% of the third length.

12. (Original) The apparatus as claimed in claim 10, wherein the second length is approximately 420mm and the third length is approximately 300mm.

13. (Original) The apparatus as claimed in claim 12, wherein the electrode has a diameter of approximately 360mm.

14. (Currently Amended) The apparatus as claimed in claim 1 2, wherein the acute angle is between 45 and 89 degrees.

15. (Currently Amended) The apparatus as claimed in claim 1 2, wherein the confinement layer is formed of a sidewall of the chamber.

16. (Original) The apparatus as claimed in claim 1, wherein the plasma generating means is installed outside of the chamber to generate plasma that is introduced into the plasma generating region of the chamber.

17. (Original) The apparatus as claimed in claim 16, wherein the plasma generating means comprises a plurality of induction coils mounted on the chamber and a first power supply connected to the plurality of induction coils.

18. (Currently Amended) The apparatus as claimed in claim 17, wherein the plasma generating means further comprises a second power supply connected to an electrode on which the semiconductor device is positioned.

19. ^{cancelled} ~~(Withdrawn)~~ An apparatus for increasing plasma density at an edge of a semiconductor device during a plasma-etch manufacturing process, comprising:

a first chamber within which a plasma is generated, and

a second chamber within which the semiconductor device is positioned for plasma-etch manufacturing process,

the second chamber having a smaller cross-sectional area than the first chamber.

20. ^{cancelled} ~~(Withdrawn)~~ The apparatus as claimed in claim 19, further comprising a plurality of induction coils for generating the plasma in the first chamber, and an electrode for attracting the plasma into the second chamber.